Translation of Amendment filed under PCT Article 34

CLAIMS (After Amended)

1. Canceled.

2. Canceled.

3. Canceled.

4. Canceled.

5. Canceled.

6. Canceled.

7. A correlator which receives an input signal including a fixed pattern formed by spreading a predetermined number of symbols constituting a fixed word, with pseudorandom noise code, and which is comprised of a first sub-correlator and a second sub-correlator, comprising a first sub-correlator and a second sub-correlator, and wherein

said first sub-correlator detects correlation between said input signal and said pseudorandom noise code for one symbol length, and

said second sub-correlator detects correlation detects correlation between a correlation value output from said first sub-correlator and said fixed word for said predetermined number of symbols.

8. The correlator as set forth in claim 7, wherein said correlator includes said

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first sub-correlator by one and said second sub-correlators by the number determined in accordance with types of said fixed word.

9. The correlator as set forth in claim 8, further comprising maximum detecting means which receives an output transmitted from said second sub-correlator, and outputs a maximum signal for informing synchronous detection when a correlation value transmitted from each of said second sub-correlators is in maximum.

10. A correlator comprising:

a first sub-correlator which receives a fixed pattern having a code length N ($N = M \times K$), as an input signal comprised of signals obtained by spreading a fixed word having a length of K symbol (K is a predetermined positive integer), at a rate of M chips/symbol (M is a predetermined positive integer), and detects a correlation value between a k-th ($o \leqq k < K$) symbol having a M chip length, among said fixed pattern, and pseudorandom noise code Sm (m is an integer defined as $k \times M \leqq m < (k + 1) \times M$); and

a second sub-correlator which receives data corresponding to K symbols, about a correlation value output from said first sub-correlator, and outputs a correlation value between said data and said fixed word.

11. A correlator comprising:

a first sub-correlator which receives a fixed pattern having a code length N ($N = M \times K$), as an input signal comprised of signals obtained by spreading a fixed word having a length of K symbol (K is a predetermined positive integer), at a rate of M chips/symbol (M is a predetermined positive integer), and detects a correlation value between a k-th ($o \leqq k < K$) symbol having a M chip length, among said fixed pattern, and pseudorandom noise code Sm (m is an integer defined as $k \times M \leqq m < (k + 1) \times M$);

a memory which stores a predetermined number of correlation values per a symbol which correlation values are transmitted from said first sub-correlator and are different in a phase from one another with respect to said input signal, and which stores correlation values totally corresponding to K symbol; and

a second sub-correlator which receives data corresponding to K symbols, read out of said memory every said predetermined number, and outputs a correlation value between said data and said fixed word.

12. A correlator which receives a fixed pattern having a code length N (N = M × K) which fixed pattern is obtained by spreading a fixed word having a length of K symbol (K is a predetermined positive integer), at a rate of M chips/symbol (M is a predetermined positive integer), comprising:

a first sub-correlator which receives said fixed pattern as an input signal, and detects a correlation value between a k-th ($o \leqq k < K$) symbol having a M chip length, among said fixed pattern, and pseudorandom noise code Sm (m is an integer defined as $k \times M \leqq m < (k + 1) \times M$);

a memory which stores a predetermined number (L) of correlation values per a symbol which correlation values are transmitted from said first sub-correlator and are different in a phase from one another with respect to said input signal, and which stores $L \times K$ correlation values totally corresponding to K symbol;

a reading-address controller which outputs a reading-address used for reading data corresponding to K symbol out of said memory by every L correlation values; and

a second sub-correlator which receives said data corresponding to K symbol, read out of said memory by every L correlation values, and outputs a correlation value between said data and said fixed word.

13. The correlator as set forth in claim 12, further comprising a writing-address controller which outputs a writing-address, and wherein a correlation

value output from said first sub-correlator is written into an address in said memory which address is designated by said writing-address controller.

14. The correlator as set forth in any one of claims 11 to 13, wherein said correlator includes said first sub-correlator by one and said second sub-correlators by the number determined in accordance with types of said fixed word.

15. The correlator as set forth in claim 14, further comprising maximum detecting means which receives an output transmitted from said second sub-correlator, and outputs a maximum signal for informing synchronous detection when a correlation value transmitted from each of said second sub-correlators is in maximum.

16. The correlator as set forth in any one of claims 11 to 15, further comprising a code switch which switches said pseudorandom noise code used for detecting correlation with said input signal.

17. The correlator as set forth in any one of claims 11 to 16, wherein said correlation values which are different in a phase from one another are correlation values having phases different from one another by one or 1/2 chip.

18. The correlator as set forth in any one of claims 11 to 17, wherein said memory is comprised of a dual port type random access memory.

19. The correlator as set forth in any one of claims 10 to 18, wherein said correlator includes a comparator in place of said second sub-correlator which comparator compares K correlation values transmitted from said first sub-correlator to said fixed word to check whether they are coincident with each other.

20. Canceled.

21. A CDMA (Code Division Multiple Access) type communication device including a correlator as defined in any one of claims 7 to 18.

22. A spread spectrum type communication device comprising a correlator used for carrying out synchronization capture,

said correlator comprising:

a first sub-correlator which detects correlation between an input signal and pseudorandom noise code for inverse-spreading said input signal having been spectrum-spread; and

a second sub-correlator which detects correlation between a predetermined number of correlation outputs transmitted from said first sub-correlator, and a synchronization pattern.

23. A spread spectrum type communication device comprising a correlator used for carrying out synchronization capture,

said correlator comprising:

a first sub-correlator which detects correlation between an input signal and pseudorandom noise code for inverse-spreading said input signal having been spectrum-spread; and

a comparator which compares a predetermined number of correlation outputs transmitted from said first sub-correlator, to a synchronization pattern for checking whether they are coincident with each other.